No. 751,612. PATENTED FEB. 9, 1904.

W. H. CASE.

SPRINKLER.

APPLICATION FILED OCT. 15, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

FIG. 1.

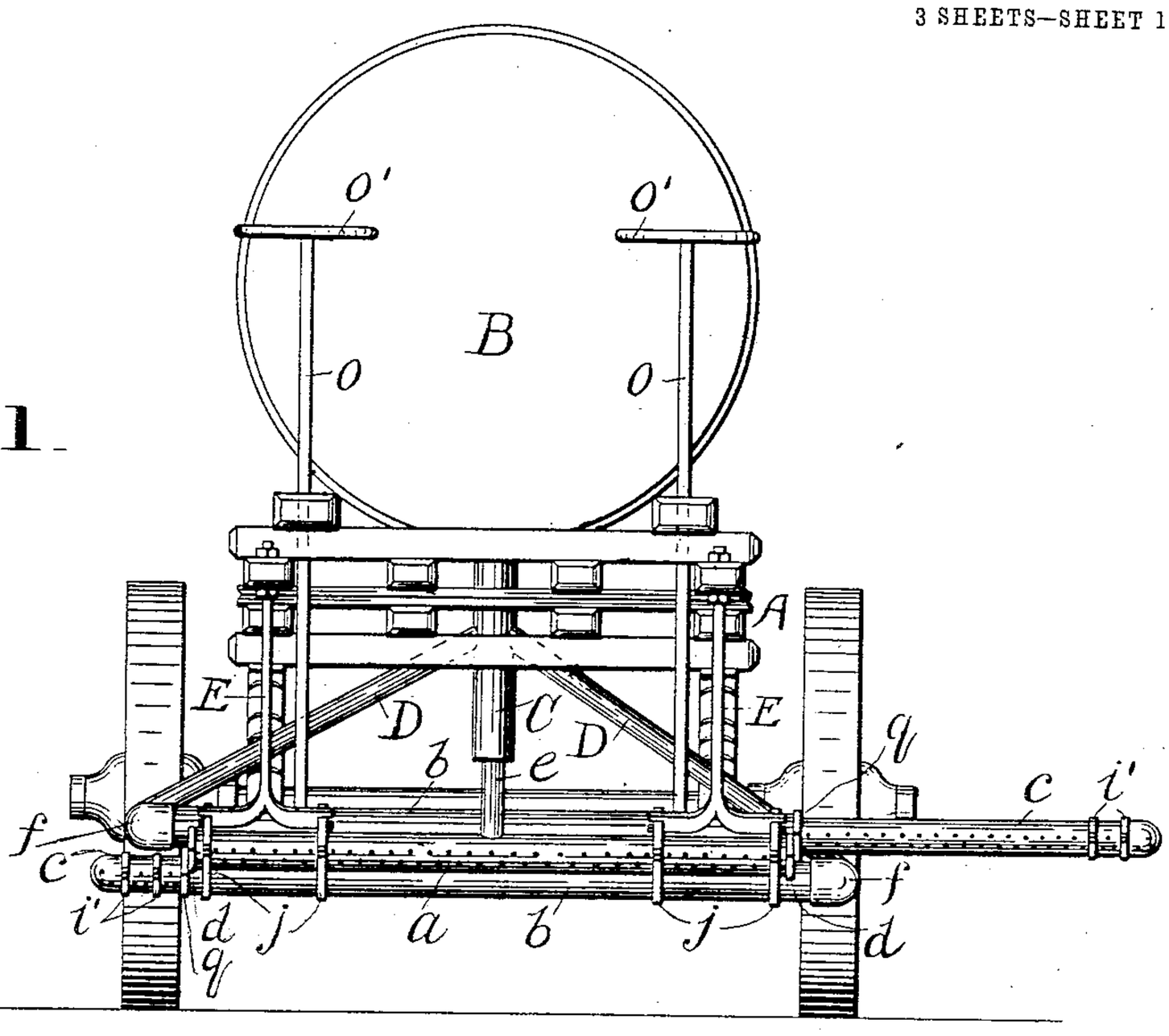
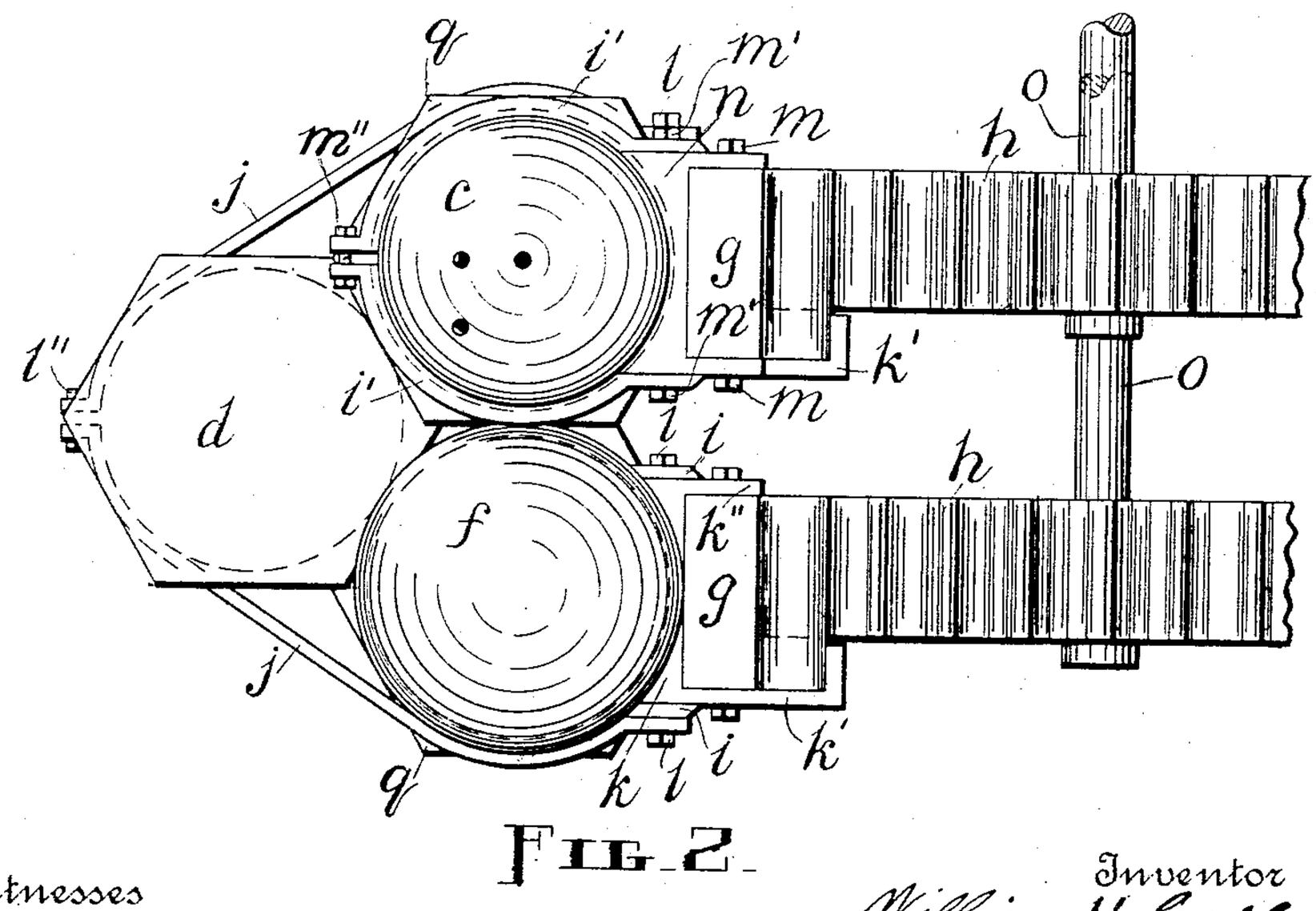


FIG. 2.



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NO MODEL. 3 SHEETS—SHEET 2.

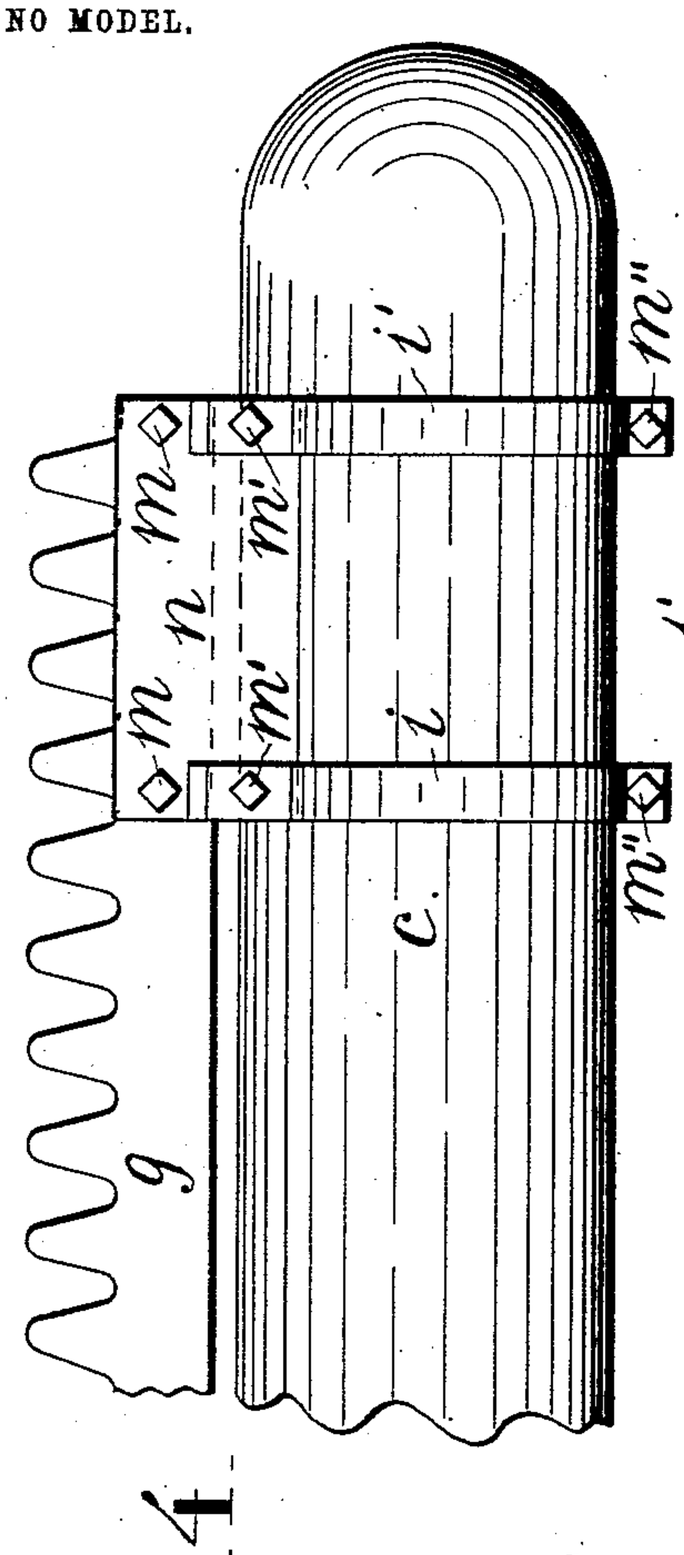

FIG. 4.

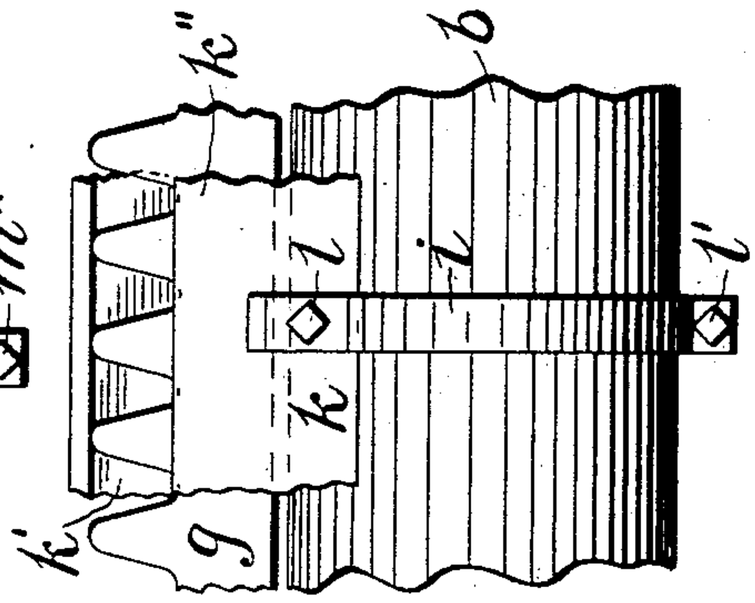

FIG. 6.

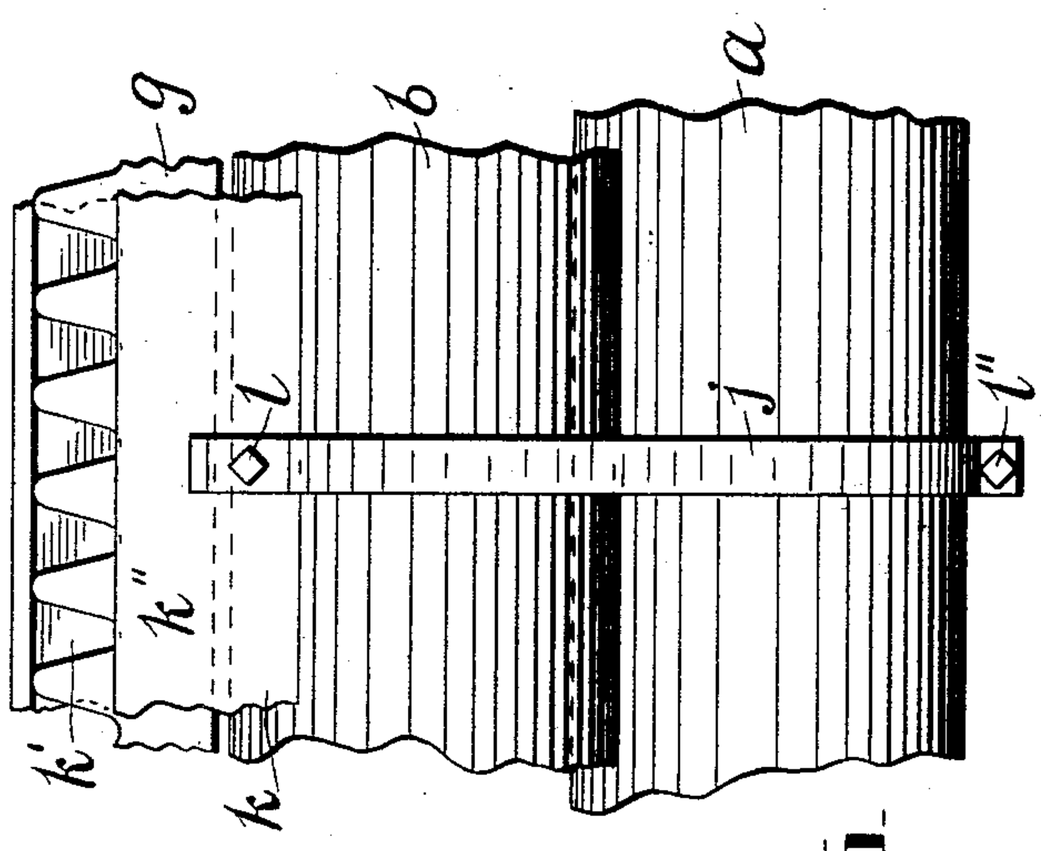

FIG. 5.

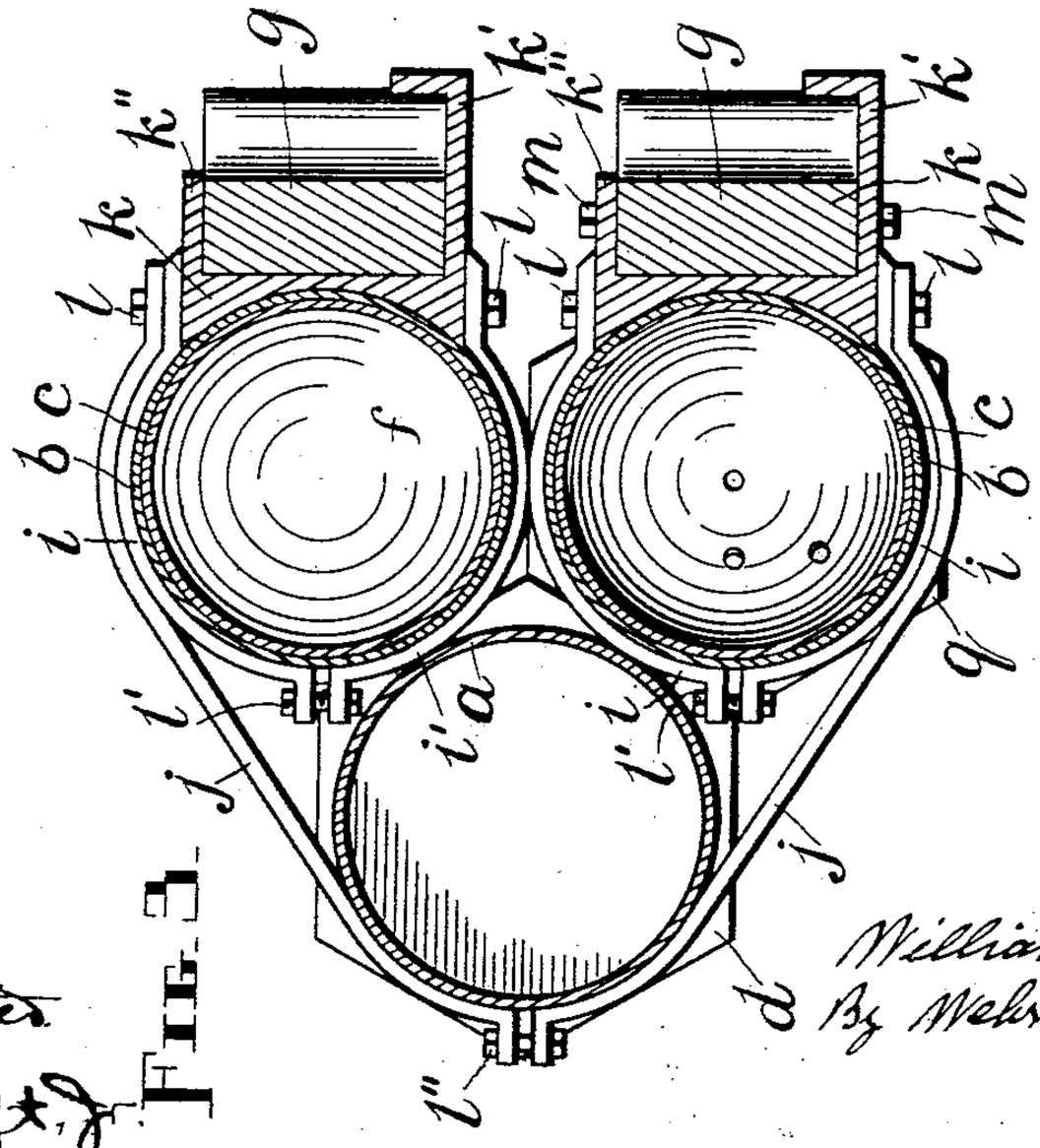

FIG. 7.

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NO MODEL. 3 SHEETS—SHEET 3.

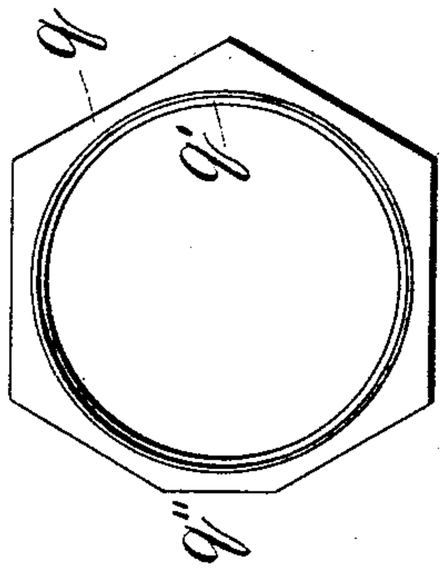

FIG. 8.

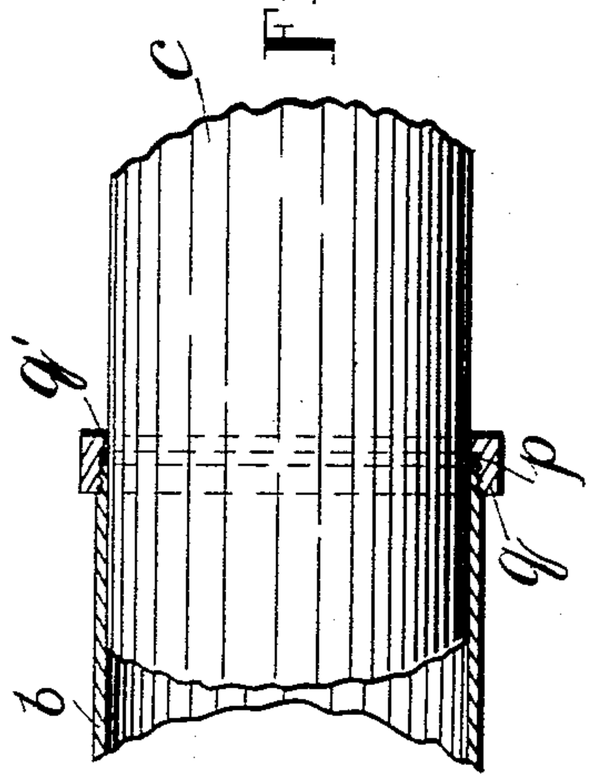

FIG. 7.

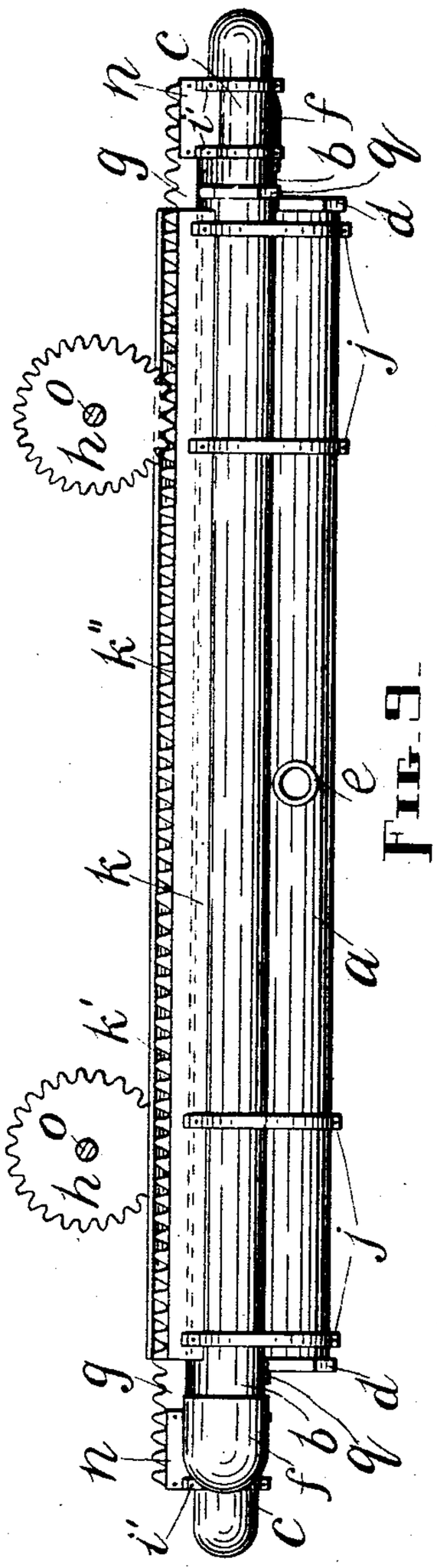

FIG. 9.

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No. 751,612. Patented February 9, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM H. CASE, OF SPRINGFIELD, MASSACHUSETTS.

SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 751,612, dated February 9, 1904.

Application filed October 15, 1903. Serial No. 177,181. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. CASE, a citizen of the United States of America, residing at Springfield, in the county of Hampden and Commonwealth of Massachusetts, have invented a new and useful Sprinkler, of which the following is a specification.

My invention relates to improvements in water-sprinklers for street use, and particularly to adjustable sprinklers in which peculiarly-arranged pipes and rack and gear mechanism are employed, as hereinafter set forth; and the objects of my invention are, first, to provide a sprinkler which is economical in the use of water and effects a saving in time; second, to afford means for sprinkling which may be adjusted to cover more or less space; third, to provide convenient and positive means for actuating the telescoping pipes of the device, which is comparatively simple in both construction and operation, and, fourth, to furnish a sprinkler of the class specified which is practicable and efficient, has movable parts which are easily operated, and is strong, durable, and not liable to get out of order. I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a front view of my device placed on the front end of a watering cart or truck, one of the extensions being run out and the other normally disposed; Fig. 2, an end view of the complete device detached, portions of the gears being broken off; Fig. 3, a cross-section, the gears being omitted; Fig. 4, a plan view of part of one of the extensions, showing how the rack is attached thereto; Fig. 5, a plan view showing the method of binding the parts together; Fig. 6, a plan view of a portion of one of the carrier-pipes, showing how the rack is attached thereto; Fig. 7, a view of the water-tight connection between the carrier and extension pipes, the first pipe with the packing ring and nut being in section; Fig. 8, a side view of the packing-nut; and Fig. 9, a plan view of the complete device unattached, all members being normally disposed. Fig. 9 is about one-quarter the size of the other views, except Fig. 1, which latter is about one-half the size of the first-mentioned figure.

Similar letters refer to similar parts throughout the several views.

My invention is particularly adapted for a motor-vehicle sprinkler which does not run on tracks, although it may be used with any ordinary means of locomotion, whether running directly on the road-bed or on tracks. In the drawings, which illustrate a preferred form of construction, I show the device applied to a motor-truck A, portions only of the front end of which are shown in Fig. 1. A water-tank B is mounted on the truck A. Any suitable pipe connections from the tank B to the sprinkler proper may be provided, such connections being indicated at C and D D. So, too, may any suitable means of support for the device be provided, the hangers E E being used in the present instance, the same depending from projecting parts of the truck.

My sprinkler proper, which is connected with the pipes C and D D and suspended from the hangers E at the front of the truck A, but which may be connected and attached in any other suitable manner to a watering cart, car, or truck, comprises a group of pipes, as follows: A perforated main sprinkling-pipe *a*, two imperforate carrier-pipes *b*, one above the other and both preferably in the rear of said main pipe and firmly attached thereto, and auxiliary perforated extension-pipes *c c*, projecting from opposite ends of said carrier-pipes—that is, one on each side of the truck. Associated and connected with this sprinkler is the mechanism presently to be described, by means of which the pipes *c* are operated. The main sprinkling-pipe *a* has its ends closed by caps *d d*, between which it is perforated in the usual manner for the escape of water. A short pipe *e*, rising from the center of the pipe *a*, connects the latter with the pipe C from the tank B. The pipe *a* is adapted to sprinkle the space between the wheels of the truck, although it may be made long enough to sprinkle beyond such space, in which event the pipes *c* may only be employed when extended or thrust out of the pipes *b* beyond the ends of said pipe *a*. In the present instance, however, the pipes *b* are used at all times to sprinkle in front of the wheels of the truck

and some distance each side thereof, as will be readily understood by reference to Fig. 1 (the left-hand side) and Fig. 9, the outer end of each pipe *c* being perforated, as well as other portions.

As above noted, the outer ends of the pipes *c* are perforated, as are the front sides or bottoms, in the usual manner, while the inner ends of said pipes open into the pipes or carriers *b*. The end of each carrier *b* opposite that through which the pipe or extension *c* protrudes is closed by a cap *f*, which is connected with one of the pipes D, leading through the pipe C to the tank B. The main sprinkling-pipe *a* is preferably located so that its horizontal central plane is in line with the horizontal central plane between the carriers *b*.

The actuating mechanism for the extension *c* consists of racks *g g* and meshing gears *h h*, a plurality of straps *i* and *i'* being utilized to respectively assist in holding said racks to the carrier *b* and fasten them to said extensions. A plurality of straps *j* firmly secures the main sprinkling-pipe *a* and the carriers *b* together. Each rack *g* is placed loosely in a trough *k*, which has a base *k'* beneath said rack and turned up back of the same and a lip *k''* projecting over the top of the rack. The troughs *k* are fastened to the backs of the carriers *b* by straps *i*, which are bolted at *l* to said troughs, pass over and under the carriers *b*, and are bolted together at *l'* along the horizontal median line in front of each carrier. The outer end of each rack *g* is bolted at *m* to a block *n*, which is fastened to the back of the corresponding extension *c* near the outer end by the straps *i''*, bolted at *m'* to said block and bolted together at *m''* along the horizontal median line in front of said extension after passing over and under the same. The extreme top and bottom bolts *l* also secure the rear ends of the straps *j*, while bolts *l''* fasten the front ends of said straps together along the horizontal median line of the front of the pipe *a*. In the present case the straps *j* are attached to the bases of the hangers E. This method of strapping and bolting the parts together recommends itself because of compactness as well as being very strong and effectual; but other methods may be adopted, of course, and it is plainly to be seen that the straps *j* may be located at the sides of and remote from the straps *i*, if desired.

The gears *h* are fast on the lower terminals of rods *o o*, which are suitably journaled in the truck. The rods *o* extend upward to a position within convenient reach of the driver or operator and may have hand-wheels *o' o'* on their upper ends to facilitate rotating them.

In order to prevent leakage of water from the end of each carrier *b* around its extension *c*, I use a ring *p*, of suitable packing material, and a nut *q*. The packing-ring *p* fits tightly over the extension against the end of the carrier opposite the cap *f*, where it is firmly held by the annular shoulder *q'* in the nut *q*, the latter being screwed onto the outside of said carrier. Although neither trough *k* extends to the nut *q* on the associated carrier, but falls short of both the nut and the cap *f*, the rack *g* after leaving said trough must pass said nut. Hence it is necessary in the present construction to cut off the adjacent corner of the nut, as best shown at *q''* in Fig. 8, in order to remove what would otherwise be an obstruction to the rack.

When the street being sprinkled is too wide to be properly covered by the device arranged as shown in Fig. 9, one or both of the extensions *c* are actuated outward the required distance through the medium of the racks *g* and gears *h* by rotating the rods *o*. Under some conditions the water falls short only on one side and a single extension *c* is all that need be thrust outward, the corresponding gear *h* being revolved in the right direction the requisite number of times to run out said extension the distance required, while under other conditions it is necessary to extend the device on both sides in order to spread the water over the whole space that has to be sprinkled. In this manner either a comparatively narrow range on the one hand or a very wide range on the other can be conveniently attended to, and the change from one extreme to the other or to any intermediate range can be expeditiously and easily made, it being understood that the extensions *c* can be actuated inward as readily as they are thrust outward by rotating the gears *h* in the proper direction.

Each pipe *c*, even when fully extended, has a sufficient bearing in its carrier *b*, which it fits quite snugly, to afford ample support for the exposed portion of said pipe, and the trough *k*, owing to its peculiar construction, is particularly well adapted to support the rack at all times. Moreover, since the rack cannot turn in the trough the former prevents its attached pipe *c* from turning, and thereby insures a discharge of water from said pipe the direction of which is constant.

The design of my sprinkler is such that only enough water for sprinkling the required space need be used. Hence there is no waste, this being in part due to the general construction and, furthermore, to the telescoping feature. It will be seen, therefore, that the sprinkler is not only economical in the use of water, but provides for an even distribution and obviates any liability to throw a double stream, which might produce a muddy condition in the street. Owing also to said telescoping feature, a saving of time is effected, inasmuch as the entire space can be covered in one trip of the cart, car, or truck.

A valve or valves must be provided in the usual and well-known manner for controlling the flow of water from the tank B into the

discharge-pipes C and D; but it has not been deemed necessary to encumber this case with an illustration or description of the same, since such valve or valves form no part of my invention.

I am aware that telescoping pipes for water-sprinklers have been used before, and do not seek to claim the same broadly in the abstract; nor do I wish to be confined strictly to the exact construction and arrangement of parts herein shown and described, since certain changes, such as have hereinbefore been pointed out and others, may be made without departing from the nature of my invention. It should be understood, too, that in some cases—as when an extended range is required on but one side, for instance—the sprinkler need be equipped with only one carrier, extension, and associated members.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a sprinkler, with a fixed perforated main pipe, of two fixed imperforate carrier-pipes one above the other and both at one side of said main pipe, provided with perforated telescoping extensions.

2. The combination, in a sprinkler, with a group of connected and attached pipes comprising a perforated main pipe and two imperforate carrier-pipes provided with perforated extensions, the latter telescoping into the carrier-pipes, of racks fast at their outer ends to said extensions, and means on said carrier-pipes at the side to support and guide said racks.

3. The combination, in a sprinkler, with a group of pipes comprising a perforated main pipe and two imperforate carrier-pipes provided with perforated extensions, of racks fast at their outer ends to said extensions, means on said carrier-pipes to support and guide said racks, and means to bind said main and carrier pipes together.

4. The combination, in a sprinkler, with a fixed main sprinkling-pipe adapted to discharge water only between its ends, of an associated fixed imperforate carrier-pipe provided with a perforated telescoping extension, the latter being adapted to discharge water only beyond one end of said main pipe.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. CASE.

Witnesses:
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STEPHEN S. TAFT, Jr.